Fueling the Future: Natural Gas & New Technologies a Cleaner 21st Century

www.fuelingthefuture.org

Natural Gas...Fueling the Future

- **Natural gas is the cleanest, most efficient fossil fuel. Increased use of natural gas could help the nation meet its environmental, economic and national security goals.**

Natural Gas - America's Energy Future

- Since the 1980s, it has been national policy to encourage broader use of natural gas, but this goal has not been fully realized
- Why does a fuel that is domestically abundant, reliable, environmentally friendly, and highly efficient, power only about one fourth of the American economy?
- The study answers this question and provides a comprehensive vision for the fuller utilization of natural gas.

The Coming Transformation of the US Energy Economy

- The study reveals that new gas technologies will change the way Americans use energy:
  - These end-use technologies have the potential to advance the US energy economy over the next decades
  - Visionary market leaders are using these new gas technologies in the field and are reaping tremendous competitive advantage

Key “Fueling the Future” Findings

- Advanced direct-use gas technologies will drive an increase in consumption of natural gas by almost 60 %
- This transformation of energy markets can happen sooner than many analysts expect
- A highly efficient and reliable natural gas delivery system is in place, which consumers, small and large, can tap with technologies such as fuel cells, microturbines and advanced gas heating/cooling equipment

National Benefits Associated with Using Gas

- Cleanest, most efficient fossil fuel
- Safe and reliable to deliver
- Greater use provides national security advantages
  - Reduced reliance on imported oil
- Generally the most economical energy option
- Expanded use and export of new gas technologies offers significant macroeconomic benefits
  - Job growth, enhanced productivity, and improving terms of trade

Environmental Advantages of Natural Gas

- Increasingly stringent environmental regulations will spur switch to cleaner burning natural gas
- Using more natural gas will help ease a number of environmental concerns - greenhouse gas emissions, acid rain, smog, solid waste and water pollution
- By 2020, CO_2 emissions would be reduced by 930 million tons per year

Plenty of Natural Gas at Reasonable Prices

- Technological advances in exploration and production can increase domestic gas supply from 19 quads today to over 29 quads in 2020 at reasonable prices
- Over 98 percent of the gas supply needed to meet a consumption level of 35 quads in 2020 can come from a secure North American supply base
- Infrastructure is in place to support increasing imports of natural gas from Canada

Enhanced Efficiency and Reliability with Direct-Use

- To play a bigger role, we must focus on all end use markets - residential, commercial, industrial and transportation -- not just central power station
- By 2020, over 20 % of new electricity generating capacity could be supplied by natural gas distributed generation (DG); or about 5 % of total capacity.
- Greater reliance on natural gas can boost overall US energy efficiency by approximately 6 % in 2020.
- Natural gas DG is highly efficient, environmentally friendly and offers customers greater choice and reliability

Investing in a Cleaner Energy Future

- New gas technologies represent a tremendous investment opportunity
- These technologies will transform the US energy landscape, providing customers of all sizes with greater choice and reliability in meeting their energy needs
- Growing global demand for cleaner-burning natural gas offers the prospect of rapidly expanding export markets for US gas technologies in the coming decades

Natural Gas is the Fuel of Choice for New Electricity Generation Capacity

- Natural gas will continue as the favored fuel for adding generating capacity
- Demand for new gas central station capacity may not increase as rapidly as some forecasts suggest
- Nuclear and coal capacity are unlikely to decline as much as these forecasts predict
- Focusing only on gas growth in central station generation ignores the potential for expansion of gas use in residential, commercial, industrial and transportation market

More Consumers at Home with Natural Gas

- 56 million households - 55% of all US homes - have natural gas service.
- The study projects residential consumption of 7.4 quads in 2020
- New residential gas uses range from fireplaces and air conditioners to microturbines and fuel cells
- The increasing popularity of home heating will continue to grow residential demand

Commercial Markets: Cold Comfort and Hot Opportunities

- Commercial use of gas can reach 5.5 quads by 2020
- The overwhelming efficiency and cost advantages of gas-fueled cooling and desiccant systems will drive commercial demand over the next decades

Industrial Markets Lead the Gas Resurgence

- Natural gas is the primary source (40%) of energy for the nation's factories
- In the industrial market, environmental and efficiency advantages drive increasing demand
- Demand could reach 13 quads in 2020
- Radical improvements in high-efficiency industrial gas equipment offer significant benefits to plant operators and the nation

Getting There

- Natural gas is a vital both to today's energy mix, and our energy future
- Investing in the natural gas industry is not only a smart business decision, but also an essential environmental choice